Amendments to the Claims

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

Claim 1 (original) A mixture of reaction products of

$$x(Ti-(OR^1)_4) + y(HO-R^2-OH) + z((HO)-C(R^3)(R^4)-W-C(R^5)(R^6)-(OH)),$$

the mixture being substantially free from di-functional diols other than HO-R²-OH, wherein

each R¹ is independently a C₁-C₁₀ alkyl group;

R² is a C₂-C₆ alkylene group;

each of R^3 , R^4 , R^5 , and R^6 is independently a hydrogen atom or a C_1 - C_4 alkyl group except that

at least one of R³ and R⁴ is a C₁-C₄ alkyl group, and at least one of R⁵ and R⁶ is a C₁-C₄ alkyl group;

W is an oxygen atom, a sulfur atom, a nitrogen-containing group, a phosphorus-containing group, or a C_1 - C_4 alkylene group;

each of x and y is greater than 0; and

y > z.

Claim 2 (original) The mixture of claim 1 wherein y = 2x - z and each of x, y, z is a number greater than 0.

Claim 3 (original) The mixture of claim 1 wherein z = 0 and y/x > 2.

Claim 4 (original) The mixture of claim 1 where W is a C_1 - C_4 alkylene group.

Claim 5 (original) The mixture of claim 4 wherein R¹ is an isopropyl group; R² is a butylene group; each of R³, R⁴, and R⁵ is a methyl group; and R⁶ is a hydrogen atom.

Claim 6 (original) The mixture of claim 1 wherein the mixture of reaction products is substantially free from all mono- and di-functional alcohols.

Claim 7 (original) A mixture of reaction products of

$$n(Ti-(OR^1)_4) + (2n-m)((HO-R^2-OH) + m((HO)-C(R^3)(R^4)-W-C(R^5)(R^6)-(OH)),$$

the mixture being substantially free from di-functional diols, wherein

each R¹ is independently a C₁-C₁₀ alkyl group;

 R^2 is a C_2 - C_6 alkylene group;

each of R³, R⁴, R⁵, and R⁶ is independently a hydrogen atom or a C₁-C₄ alkyl group except that

at least one of R³ and R⁴ is a C₁-C₄ alkyl group, and at least one of R⁵ and R⁶ is a C₁-C₄ alkyl group;

W is an oxygen atom, a sulfur atom, a nitrogen-containing group, a phosphoruscontaining group, or a C₁-C₄ alkylene group; and each of m and n is greater than 0.

Claim 8 (original) The mixture of claim 7 where W is a C₁-C₄ alkylene group.

Claim 9 (original) The mixture of claim 7 wherein R¹ is an isopropyl group.

Claim 10 (original) The mixture of claim 7 wherein R² is a butylene group.

Claim 11 (original) The mixture of claim 7 wherein R¹ is an isopropyl group; R² is a butylene group; each of R³, R⁴, and R⁵ is a methyl group; R⁶ is a hydrogen atom; and W is a methylene group.

Claim 12 (original) The mixture of claim 7 wherein m/2n is between about 0.1 to about 0.5.

Claim 13 (original) The mixture of claim 12 wherein m/2n is between about 0.15 to about 0.25.

Claim 14 (original) The mixture of claim 7 further comprising an organic solvent.

Claim 15 (original) The mixture of claim 7 wherein the mixture is obtained from a reaction conducted in an organic solvent.

Claim 16 (original) The mixture of claim 15 wherein the organic solvent is a chlorohydrocarbon.

Claim 17 (original) The mixture of claim 16 wherein the organic solvent is o-dichlorobenzene.

Claim 18 (original) The mixture of claim 7 wherein the mixture of reaction products is substantially free from all mono- and di-functional alcohols.

Claims 19-25 (canceled)

Claim 26 (original) A method for depolymerizing a polyester comprising the step of contacting, in the presence of heat, a mixture comprising: a polyester, an organic solvent which is

- substantially free of oxygen and water, and the mixture of claim 1, to produce macrocyclic oligoesters substantially free from macrocyclic co-oligoesters.
- Claim 27 (original) The method of claim 26 wherein the polyester comprise poly(1,4-butylene terephthalate).
- Claim 28 (original) A method for depolymerizing a polyester comprising the step of contacting, in the presence of heat, a mixture comprising: a polyester, an organic solvent which is substantially free of oxygen and water, and the mixture of claim 7, to produce macrocyclic oligoesters substantially free from macrocyclic co-oligoesters.
- Claim 29 (currently amended) A method for depolymerizing a polyester to produce macrocyclic oligoesters substantially free from macrocyclic co-oligoesters, the method comprising the step of contacting, in the presence of heat, a mixture comprising: a polyester, an organic solvent which is substantially free of oxygen and water, and the a mixture of claim 19, reaction products of:

$$n(Ti-(OR^{1})_{4}) + m(HO-R^{2}-OH),$$

wherein

each R^1 is independently a C_1 - C_{10} alkyl group;

 R^2 is an unbranched C_2 - C_6 alkylene group; and

each of m and n is greater than 0, and m/n > 2

to produce macrocyclic oligoesters substantially free from macrocyclic co-oligoesters.

- Claim 30 (new) The mixture of claim 1 wherein W is an oxygen atom, a sulfur atom, a nitrogen-containing group, a phosphorus-containing group, an ethylene group, a propylene group, or a butylene group.
- Claim 31 (new) A method for depolymerizing a polyester comprising the step of contacting, in the presence of heat, a polyester, an organic solvent, and a mixture of reaction products of $x(Ti-(OR^1)_4) + y(HO-R^2-OH) + z((HO)-C(R^3)(R^4)-W-C(R^5)(R^6)-(OH))$,

wherein

each R¹ is independently a C₁-C₁₀ alkyl group;

 R^2 is a C_2 - C_6 alkylene group;

each of R³, R⁴, R⁵ and R⁶ is independently a hydrogen atom or a C₁-C₄ alkyl group;

W is an oxygen atom, a sulfur atom, a nitrogen-containing group, a phosphorus-containing group, or a C₁-C₄ alkylene group; each of x and y is greater than 0; and y>z.

- Claim 32 (new) The method of claim 31 wherein the mixture of reaction products is substantially free from di-functional diols other than HO-R²-OH.
- Claim 33 (new) A method for depolymerizing a polyester comprising the step of contacting, in the presence of heat, a polyester, an organic solvent, and a mixture of reaction products of $n(Ti-(OR^1)_4) + m(HO-R^2-OH)$,

wherein

each R^1 is independently a C_1 - C_{10} alkyl group; R^2 is a C_2 - C_6 alkylene group; and each of m and n is greater than 0, and m/n > 2.

- Claim 34 (new) The method of claim 33 wherein R¹ is an isopropyl group.
- Claim 35 (new) The method of claim 33 wherein R² is a butylene group.
- Claim 36 (new) The method of claim 33 wherein R¹ is an isopropyl group and R² is a butylene group.
- Claim 37 (new) The method of claim 33 wherein 5 > m/n > 3.
- Claim 38 (new) The method of claim 33 wherein the mixture is obtained from a reaction conducted without a solvent.
- Claim 39 (new) The method of claim 33 substantially free of all mono- and di-functional alcohols.
- Claim 40 (new) The method of claim 33 wherein R² is an unbranched C₂-C₆ alkylene group.